Worksheet 2 Thinking ahead

Task 1

1. Using the headings given, specify the inputs and outputs to the following problems:

    (a) Sort a list of names into alphabetical order and return the sorted list, leaving the original list unchanged.

    Name:

    Inputs:

    Outputs:

    (b) Find the average of a list of marks.

    Name:

    Inputs:

    Outputs:

    (c) A tuple contains a list of student names and their marks for an exam. It is in the form ($name_1$, $mark_1$, $name_2$, $mark_2$, ... $name_n$, $mark_n$) where $name_n$ is a string and $mark_n$ is an integer. A function is required to assign grades to each student according to their mark.

    Name: grades

    Inputs:

    Outputs:

Task 2

2. Specify inputs, outputs and precondition for the following problem:

    Given two lists of integers, return a list in which each element is the sum of the corresponding elements in the two input lists.

    Name: **addLists**

    Inputs:

    Outputs:

    Precondition:

Task 3

3. A user working on a PC at home has done several searches on the Internet and leaves the browser windows opens when she shuts down. The next day, her mother needs to use the PC. On opening the browser, all the windows that were previously open, appear automatically.

    How does this happen? What are the advantages? What are the drawbacks? How can this situation be prevented?

4. Most of the time caching is behind the scenes and undetectable by the user. Apart from the example given in question 3, can you think of another example of caching which the user can see?